REMARKS

I. STATUS OF THE CLAIMS

New claims 21-24 are added. Support for the new claims is found, for example, on page 5, lines 14-25, of the specification.

In view of the above, it is respectfully submitted that claims 1-24 are currently pending.

II. REJECTION OF CLAIMS UNDER 35 USC 112, FIRST AND SECOND PARAGRAPHS

The claims are amended to recite a wavelength multiplexed light. Support for the amendments is found, for example, on page 12, line 1, and on page 13, line 16, of the specification.

The claims are amended to delete the term "non-uniform intensity distribution".

The claims are amended to recite features relating to "diffraction loss". Support for the term "diffraction loss" is found, for example, on page 6, lines 1-24, of the specification.

In view of the above, it is respectfully submitted that the rejections are overcome.

III. REJECTION OF CLAIMS 1-5, 7-9 AND 11-20 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER FUKUSHIMA (US PATENT NO. 5,805,759)

Claim 1 recites a filter that is arranged in a path of a wavelength multiplexed light including a plurality of different wavelengths multiplexed together and which are not separated into respective wavelengths.

Claim 1 recites the filter having a diffraction unit that is movable in a direction substantially perpendicular to a direction of the wavelength multiplexed light, wherein the filter has first and second filter portions with the diffraction unit between the first and second filter portions, and the wavelength multiplexed light hits the first and second filter portions and the diffraction unit so that diffraction loss of the wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

Claim 1 also recites a moving unit that moves the diffraction unit to thereby change the transmittance versus wavelength characteristic of the filter.

See, for example, FIGS. 2A and 2B, and the disclosure on page 5, lines 24-25, and page 6, line 24, through page 7, line 21, of the specification.

The transmission slit 42 in FIGS. 7(C) and 7(D) of Fukushima does not operate in the same manner as the diffraction unit recited in claim 1. More specifically, in Fukushima, a

spectral beam is a beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam. See, for example, column 5, lines 13-17, of Fukushima. As shown, for example, in FIG. 4 of Fukushima, diffraction gratings 20 and 22 are used to create a spectral beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam.

The filter, such as attenuator plate 6D in FIG. 7(C) of Fukushima, is displaced with respect to the spatially separated wavelength components. In other words, in Fukushima, *the wavelength of the beam to be filtered varies* as the attenuator plate 6D is moved, thereby achieving a variable wavelength characteristic.

Moreover, as indicated in column 9, lines 35-43, of Fukushima, the transmittance on portions of attenuator plate 6D other than the transmission slit 42 have 0% transmittance. Therefore, *the transmission slit 42 only functions as a window that transmits 100% (in principle) of the spectral beam.*

From the above description of Fukushima, it can be seen that the light hitting the attenuator plate 6D of Fukushima is NOT a "wavelength multiplexed light" including a plurality of different wavelengths which "are not separated into respective wavelengths". Instead, in Fukushima, a beam is separated into respective wavelength components by diffraction gratings 20 and 22 before interacting with attenuator plate 6D. See, for example, column 5, lines 13-17, of Fukushima. Therefore, Fukushima is significantly different than that recited, for example, in claim 1.

Moreover, please note that claim 1 recites that diffraction loss of the wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength. This does not happen in Fukushima as long as the diffraction gratings 20 and 22 are used in Fukushima. Further, it is not possible to remove the diffraction gratings 20 and 22 in Fukushima, as removal of the diffraction gratings would lose all the transmission versus wavelength characteristics shown, for example, in FIGS. 5(B), 5(D), 5(F), 6(B), 6(D), 6(F), 7(B), 7(D) and 7(F) of Fukushima.

The above comments are specifically directed to claim 1. However, it is respectfully submitted that the comments are helpful in understanding differences of the other claims over Fukushima.

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Claim 17 recites that the first and second filter portions each have a same, non-zero transmittance versus wavelength characteristic over wavelengths in the collimated light. See

also claims 18-20. See, for example, FIG. 2, and the disclosure on page 6, lines 3-5; page 6, lines 22-23; and column 18, lines 12-17, of the present application.

FIG. 7(C) of Fukushima discloses an attenuator plate 6D. The transmittance versus wavelength characteristics of attenuator plate 6D are shown in FIG. 7(D) of Fukushima. As can be seen in FIG. 7(D) of Fukushima, the portions adjacent to slit 42 have zero transmittance for wavelengths in the light. Therefore, the attenuator plate 6D in Fukushima is significantly different that that recited, for example, in claims 17-20.

In the Office Action, the Examiner rejects claims 17-20 by referring to FIGS. 7(A) and 7(B) of Fukushima. However, it is respectfully submitted that these figures are substantially opposite to what is recited in claims 17-20.

More specifically, FIG. 7(A) of Fukushima shows a blocking stripe 40 in the center of attenuator plate 6c. Therefore, in essence, the blocking stripe 40 is positioned between two transparent areas. This is substantially opposite that recited, for example, in claim 17 (which is dependent from claim 1), where the diffraction unit is *between* the first and second filter portions.

Please note that claim 20 is dependent from claim 13, which specifically recites a slit between the first and second film portions. The arrangement in FIGS. 7(A) and 7(B) of Fukushima is substantially opposite the recitation in claim 20.

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In view of the above, it is respectfully submitted that the rejection is overcome.

IV. REJECTION OF CLAIM 10 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER FUKUSHIMA IN VIEW OF MATSUNO

The above comments for distinguishing over Fukushima also apply here, where appropriate.

In view of the above, it is respectfully submitted that the rejection is overcome.

V. REJECTION OF CLAIMS 1-6 AND 10-14 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER LUO (US 2004/0005115)

Claim 1 recites the filter having a diffraction unit that is movable in a direction substantially perpendicular to a direction of the wavelength multiplexed light, wherein the filter has first and second filter portions with the diffraction unit between the first and second filter portions, and the wavelength multiplexed light hits the first and second filter portions and the diffraction unit so that diffraction loss of the wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a

transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

See, for example, FIGS. 1 and 2, and the corresponding disclosure on page 5, line 3, through page 7, line 21, of the specification.

Luo discloses bandpass filters with a space in between. For example, FIG. 3 of Luo discloses bandpass filters 380 and 390 with a space in between. However, light does not hit the space. For example, in FIG. 3 of Luo, the arrow from lens 430(f) refers to the light passing through lens 430(f). It can be seen in FIG. 3 of Luo that this light only hits and reflects off the various bandpass filters, and does not pass through the spaces between the bandpass filters. See also the various other arrows, representing other lights, in FIG. 3 of Luo. See also, for example, paragraphs [0026]-[0028] of Luo.

This operation is significantly different than that recited, for example, in claim 1,where the wavelength multiplexed light hits the first and second filter portions *and the diffraction unit* so that diffraction loss of the wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

In the Office Action, the Examiner appears to indicate that "edges" of the bandpass filters in Luo operate as the claimed "diffraction unit". For example, the Examiner appears to assert that bandpass filter 380 of Luo corresponds to the claimed first filter portion, and that bandpass filter 390 of Luo corresponds to the claimed second filter portion. The Examiner then appears to assert that the "edges" of the bandpass filters 380 and 390 correspond to the claimed diffraction unit.

It is respectfully submitted that the Examiner's correlation in not well-understood by the Applicant. For example, no portion of Luo indicates that a wavelength multiplexed light hits both bandpass filter 380 and 390 in the manner recited, for example, in claim 1. Instead, as shown in FIG. 3 of Luo, light input into the device first hits bandpass filter 340, then is reflected to bandpass filter 380, then is reflected to bandpass filter 350, and then is reflected to bandpass filter 390. Therefore, a different light with different wavelengths therein hits bandpass filter 380 as compared to the light that hits bandpass filter 390.

Therefore, Luo does not disclose or suggest a wavelength multiplexed light hits the first and second filter portions and the diffraction unit so that diffraction loss of the wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength as recited, for example, in claim 1.

Moreover, claim 1 recites a moving unit that moves the diffraction unit to thereby change the transmittance versus wavelength characteristic of the filter. Luo does not disclose or suggest this feature.

In the Office Action, the Examiner concedes that Luo does not explicitly teach a moving unit. However, the Examiner asserts that it would be obvious to modify Luo to include a moving unit. The Applicants respectfully disagree.

More specifically, FIG. 3 of Luo discloses an add/drop multiplexer into which a plurality of lights are input and a plurality of lights are output. The add/drop multiplexer must remain stable, or the entire alignment of the various lights/filters/lenses will be disturbed and the device will not work properly. For example, FIG. 3 of Luo discloses a large, single optical block 310 onto which all the bandpass filters are adhesively coupled or deposited. See, for example, paragraph [0022] of Luo. Therefore, to move a single filter, the entire block 310 would have to be moved, which would undesirably change the alignment of all the other lights/filters/lenses. For example, to change the transmittance of bandpass filter 380, the entire block 310 would have to be moved, which would undesirably change the alignment of all the other lights/filters/lenses. Such movement would destroy the operation of the device in Luo.

Moreover, claim 1 specifically recites that the filter is movable in a direction substantially perpendicular to a direction of the wavelength multiplexed light. In Luo, the various lights are reflected to the various bandpass filters 380, 390, etc., at an acute angle. See, for example, FIG. 3 of Luo. There is no indication or reason in Luo to move optical block 310 in a direction perpendicular to a direction of a reflected light.

Therefore, it is respectfully submitted that the overall operation and nature of the device in Luo is substantially different than that recited, for example, in claim 1.

The above comments are specifically directed to claim 1. However, it is respectfully submitted that the comments would be helpful in understanding differences of various other claims over the cited reference.

In view of the above, it is respectfully submitted that the rejection is overcome.

VI. CONCLUSION

In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: April 1, 2008

By: _____
Paul I. Kravetz
Registration No. 35,230

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501